

FEBRUARY 12, 2014

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica St. Louis

13715 Rider Trail North

Earth City, MO 63045

Tel: (314)298-8566

TestAmerica Job ID: 160-5113-1

TestAmerica Sample Delivery Group: SL1420

Client Project/Site: S,W,I,A ,X SAFS- GROUNDWATER

For:

CH2M Hill Plateau Remediation Company

PO BOX 1600, MS H8-41

Richland, Washington 99352

Attn: General Mailbox



Authorized for release by:

2/12/2014 11:56:23 AM

Jayna Awalt, Project Manager I

(314)298-8566

jayna.awalt@testamericainc.com

LINKS

Review your project
results through

TotalAccess

Have a Question?



Visit us at:

www.testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

1

2

3

4

5

6

7

8

9

10

11

12

13

Table of Contents

Cover Page	1
Table of Contents	2
Case Narrative	3
Chain of Custody	5
Receipt Checklists	16
Definitions/Glossary	19
Method Summary	20
Sample Summary	21
Detection Summary	22
Client Sample Results	23
QC Sample Results	26
QC Association Summary	31
Surrogate Summary	33



Client: CH2M Hill Plateau Remediation Company
Project/Site: S,W,I,A ,X SAFS- GROUNDWATER

TestAmerica Job ID: 160-5113-1
SDG: SL1420

Job ID: 160-5113-1

Laboratory: TestAmerica St. Louis

Narrative

CASE NARRATIVE

CH2MHill Plateau Remediation Company
P.O. Box 1600
MS B3-60
Richland, Washington 99352
February 12, 2014
Attention: Scot Fitzgerald

SDG	: SL1420
Number of Samples	: 8 samples
Sample Matrix	: Water
Data Deliverable	: Summary
Date SDG Closed	: January 22, 2014

II. Introduction

Between January 9 and January 22, 8 water samples were received by TestAmerica - St. Louis for chemical analysis. The samples were received within temperature criteria. See the COC and receipt checklist for documentation of any variations on receipt conditions and temperature. Upon receipt, the samples were given laboratory Ids to correspond with specific client Ids. Please refer to the Sample Summary sheets attached to this case narrative. This report is incomplete without the narrative.

The following SAFs are associated with this SDG: S14-012, I14-011, I14-007, and S14-001

III. Analytical Results/ Methodology

The analytical results for this report are presented by analytical test. Each set of data includes sample identification information, analytical results and the appropriate detection limits. All results are based upon samples as they were received, i.e. wet weight, unless otherwise noted on the data sheets. See the attached Methods Summary Form for the methods used in this SDG.

MS/MSD/Dup analysis was done per the client requirements. Analytical batches that did not contain matrix QC were analyzed with a LCS/LCS duplicate.

Deviation from Request: None

IV. Definitions

QCBLK- Quality Control Blank, Method Blank
QCLCS- Quality Control Laboratory Control Sample, Blank Spike
DUP- Laboratory Duplicate
MS- Matrix Spike
MSD- Matrix Spike Duplicate

The term "Detection Limit" used in the analytical data report refers to either the lab's standard reporting limits or contractually required reporting limits, whichever is applicable.

The following data qualifiers may be applicable to the results in this report, as appropriate.

- **B** - For inorganic analyses, the sample result is greater than the MDL but less than the RL.
- **B** - For organic analyses, Method Blank contamination. The Method Blank contains the target analyte at a concentration above the

Client: CH2M Hill Plateau Remediation Company
Project/Site: S,W,I,A ,X SAFS- GROUNDWATER

TestAmerica Job ID: 160-5113-1
SDG: SL1420

Job ID: 160-5113-1 (Continued)

Laboratory: TestAmerica St. Louis (Continued)

MDL.

- **J** - For organic analyses, the sample is estimated and less than the RL.
- **C** - For inorganic analyses, Method Blank contamination. The Method Blank contains the target analyte at a concentration above the MDL.
- **D** - For all analyses, the sample result was obtained from the analysis of a dilution.
- **N** - For inorganics and GC analyses, the spike/spike duplicate recoveries are outside QC limits.
- **T** - For GCMS analyses, the spike/spike duplicate recoveries are outside QC limits.
- **O** - For all analyses, the LCS (LCSD) recoveries are outside QC limits.
- **M** - For inorganic analyses, the precision was outside control limits.
- **P** - For organic analyses (PCB/Pests only), the aroclor target analyte has greater than 25% difference for detected concentrations between the two GC columns.

Pesticides

Batch: 102842

Elevated reporting limits are provided for the following samples due to insufficient sample provided for preparation. A reduced volume was used for MS/MSD analysis.

The laboratory control sample (LCS) for prep batch 101603 recovered outside control limits for the following analytes: 4,4'-DDD, 4,4'-DDE, delta-BHC, and Methoxychlor. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported. These analytes have been qualified accordingly with an "O" flag in the associated samples. (LCS 160-101603/2-A)

The matrix spike and/or matrix spike duplicate (MS/MSD) recoveries for prep batch 101603 were outside upper control limits for alpha-BHC, 4,4'-DDD, Endrin, 4,4'-DDT, alpha-Chlordane, 4,4'-DDE, and delta-BHC. Samples were ND for these analytes. Sample data is reported with this narrative. These analytes have been qualified accordingly with an "N" flag in the associated samples. (160-5242-1 MS), (160-5242-1 MSD)

Batch: 99030

Elevated reporting limits are provided for the following samples due to insufficient sample provided for preparation. A reduced volume was used for MS/MSD analysis.

Sulfide

Batch: 97892

Sulfide was detected in method blank MB 160-97892/1 at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged "B". If the associated sample reported a result above the MDL and/or RL, the result has been flagged "C".

I certify that this Summary Package is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. The Laboratory Manager or a designee, as verified by the signature on the cover page has authorized release of the data contained in this hard copy data package.

Reviewed and approved:

Jayna Awalt
St. Louis Project Manager

CH2MHill Plateau Remediation Company <div style="text-align: right;">911420</div>				CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST <div style="text-align: right;">C.O.C. # S14-012-186 Page 1 of 1</div>			
Collector	SCOTT KING	Contact/Requester	Karen Waters-Husted		Telephone No.	509-376-4650	
SAF No.	S14-012	Sampling Origin	Hanford Site		Purchase Order/Charge Code	300071ES20	
Project Title	SURV, DECEMBER 2013	Logbook No.	HNF-N-506 60154		Ice Chest No.	GWS-098	
Shipped To (Lab)	TestAmerica St. Louis	Method of Shipment	Commercial Carrier		Bill of Lading/Air Bill No.	7975 8278 0470	
Protocol	SURV	Priority:	30 Days	PRIORITY	Offsite Property No.		
POSSIBLE SAMPLE HAZARDS/REMARKS *** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)				Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>			
Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	
B2TK19	N		JAN 07 2014	0936	2x1-L aG	8081_PEST_GC: CH 01	
B2TK19	N	W	✓	✓	1x20-mL P	Activity Scan	
				Holding Time	Preservative		
				7/40 Days	Cool~4C		
				6 Months	None		

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time	Matrix *
SCOTT KING	<i>[Signature]</i>		JAN 07 2014 1435	356241			JAN 07 2014	S = Soil DS = Drum Solids SE = Sediment DL = Drum Liquids SO = Solid T = Tissue SL = Sludge W1 = Wipe W = Water L = Liquid O = Oil V = Vegetation A = Air X = Other
Relinquished By				Received By				
SSU-1	<i>[Signature]</i>		JAN 08 2014 0656	MA White			JAN 08 2014 0656	
Relinquished By				Received By				
MA White	<i>[Signature]</i>		JAN 08 2014 1400	CHPRC				
Relinquished By				Received By				
CHPRC	<i>[Signature]</i>		JAN 08 2014 1400	FEDEX				
Relinquished By				Received By				
	<i>[Signature]</i>			bran Daniels			1/9/14 1120	
FINAL SAMPLE	Disposal Method (e.g., Return to customer, used in process)						Date/Time	
DISPOSITION	Disposed By							

CH2MHill Plateau Remediation Company		C.O.C. # S14-012-676	
91420		Page 1 of 1	
CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			
Collector	SCOTT KING	Contact/Requester	Karen Waters-Husted
SAF No.	S14-012	Sampling Origin	Hanford Site
Project Title	SURV, DECEMBER 2013	Logbook No.	HNF-N-50600 156
Shipped To (Lab)	TestAmerica St. Louis	Method of Shipment	Commercial Carrier
Protocol	SURV	Priority:	30 Days
POSSIBLE SAMPLE HAZARDS/REMARKS		SPECIAL INSTRUCTIONS	
*** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)		Hold Time Site Wide Generator Knowledge Information Form applies. The CACN for analytical work at WSCF is 401647. FY13 and FY14 samples cannot be in the same SDG.	
Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		Offsite Property No.	
Sample No.	Filter	No/Type Container	Sample Analysis
B2TJ02	N	2x1-L aG	8081_PEST_GC: CH 01
B2TJ02	N	1x20-mL P	Activity Scan
			Preservative
			Cool~4C
			None

Relinquished By	Print	Sign	Received By	Print	Sign	Date/Time	Matrix *
SCOTT KING			356 #1			JAN 07 2014 1405	S = Soil SE = Sediment SO = Solid SL = Sludge W = Water O = Oil A = Air
Relinquished By	Print	Sign	Received By	Print	Sign	Date/Time	Matrix *
SSU-1			MA White			JAN 08 2014 0656	DS = Drum Solids DL = Drum Liquids T = Tissue WI = Wine L = Liquid V = Vegetation X = Other
Relinquished By	Print	Sign	Received By	Print	Sign	Date/Time	Matrix *
MA White			CHPRC			JAN 08 2014 1400	
Relinquished By	Print	Sign	Received By	Print	Sign	Date/Time	Matrix *
CHPRC			FEDEX			JAN 08 2014 1400	
Relinquished By	Print	Sign	Received By	Print	Sign	Date/Time	Matrix *
FEDEX			Bran Davis			1/9/14 1120	
FINAL SAMPLE DISPOSITION		Disposal Method (e.g., Return to customer, used in process)		Disposed By		Date/Time	

Page 7 of 33

2/12/2014

CH2MHill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		C.O.C. # I14-011-028	
81420				Page 1 of 1	
Collector	F.M. Hall	Contact/Requester	Karen Waters-Husted	Telephone No.	509-376-4650
SAF No.	I14-011	Sampling Origin	Hanford Site	Purchase Order/Charge Code	300071ES20
Project Title	2ZP1, DECEMBER 2013	Logbook No.	HNF-N-506 53/89	Ice Chest No.	6WS-098
Shipped To (Lab)	TestAmerica St. Louis	Method of Shipment	Commercial Carrier	Bill of Lading/Air Bill No.	7975834780470
Protocol	CERCLA	Priority:	30 Days	Offsite Property No.	
POSSIBLE SAMPLE HAZARDS/REMARKS *** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)		SPECIAL INSTRUCTIONS 200 Area Generator Knowledge Information Form applies. The CACN for analytical work at WSCF is 401647. FY13 and FY14 samples cannot be in the same SDG.		Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Sample No.	Filter	*	Date	Time	No/Type Container
B2TKP1	N	W	1/7/14	1156	3x500-mL G/P
B2TKP1	N	W	↓	↓	1x20-mL P
Sample Analysis		Holding Time		Preservative	
9034_SULFIDE: COMMON		7 Days		ZnAc+NaOH to pH > 9/Cool~4C	
Activity Scan		6 Months		None	

Relinquished By F.M. Hall	Print	Sign	Date/Time JAN 07 2014 1553	Received By SSU #1	Print	Sign	Date/Time JAN 07 2014 1553	Matrix *
Relinquished By SSU #1	Print	Sign	Date/Time JAN 08 2014 0656	Received By MA White	Print	Sign	Date/Time JAN 08 2014 0656	S = Soil
Relinquished By MA White	Print	Sign	Date/Time JAN 08 2014 1400	Received By CHPRC	Print	Sign	Date/Time JAN 08 2014 0656	SE = Sediment
Relinquished By CHPRC	Print	Sign	Date/Time JAN 08 2014 1400	Received By FedEx	Print	Sign	Date/Time JAN 08 2014 1400	SO = Solid
Relinquished By FedEx	Print	Sign	Date/Time JAN 08 2014 1400	Received By Brian Wenzel	Print	Sign	Date/Time 1/9/14 1120	SL = Sludge
								W = Water
								O = Oil
								A = Air
								DS = Drum Solids
								DL = Drum Liquids
								T = Tissue
								WI = Wipe
								L = Liquid
								V = Vegetation
								X = Other
FINAL SAMPLE DISPOSITION		Disposal Method (e.g., Return to customer, used in process)		Disposed By		Date/Time		
2/12/2014				Brian Wenzel		1/9/14 1120		

CH2M Hill Plateau Remediation Company		C.O.C. # I14-011-026	
SL1420		Page 1 of 1	
CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			
Collector	F. M. Hall	Contact/Requester	Karen Waters-Husted
SAF No.	I14-011	Sampling Origin	Hanford Site
Project Title	2ZP1, DECEMBER 2013	Logbook No.	HNF-N-506 53/89
Shipped To (Lab)	TestAmerica St. Louis	Method of Shipment	Commercial Carrier
Protocol	CERCLA	Priority:	30 Days
POSSIBLE SAMPLE HAZARDS/REMARKS		SPECIAL INSTRUCTIONS	
*** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)		Hold Time 200 Area Generator Knowledge Information Form applies. The CACN for analytical work at WSCF is 401647. FY13 and FY14 samples cannot be in the same SDG.	
Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		Offsite Property No.	
Sample No.	Filter	No/Type Container	Sample Analysis
B2TKW4	N	3x500-mL G/P	9034_SULFIDE: COMMON
B2TKW4	N	1x20-mL P	Activity Scan
		Time	Holding Time
		17/14 1045	7 Days
		↓	6 Months
			Preservative
			ZnAc+NaOH to pH > 9/Cool~4C
			None

Relinquished By	F. M. Hall	Print	Sign	Date/Time	Received By	SSU #1	Print	Sign	Date/Time
Relinquished By	SSU #1	Print	Sign	Date/Time	Received By	MA White	Print	Sign	Date/Time
Relinquished By	MA White	Print	Sign	Date/Time	Received By	CHPRC	Print	Sign	Date/Time
Relinquished By	CHPRC	Print	Sign	Date/Time	Received By	Brian Davis	Print	Sign	Date/Time
Relinquished By	F. M. Hall	Print	Sign	Date/Time	Received By	Brian Davis	Print	Sign	Date/Time
2/12/2014					1/9/14 1120				
FINAL SAMPLE DISPOSITION					Disposal Method (e.g., Return to customer, used in process)				
PRINTED O 10/24/2013					A-6004-842 (REV 2)				

FEBRUARY 12, 2014

IMPORTANT!A winter storm is causing delays and disruptions in the eastern U.S. [Learn More](#)**797582780470**Ship (P/U) date :
Wed 1/08/2014 3:59 pm
RICHLAND, WA US**Delivered**

Signed for by: J CLARK

Actual delivery :
Thur 1/09/2014 11:19 am
EARTH CITY, MO US**Travel History**

Date/Time	Activity	Location
- 1/09/2014 - Thursday		
11:19 am	Delivered	EARTH CITY, MO
9:07 am	On FedEx vehicle for delivery	EARTH CITY, MO
9:01 am	At local FedEx facility	EARTH CITY, MO
7:25 am	At destination sort facility	BERKELEY, MO
1:31 am	Arrived at FedEx location	MEMPHIS, TN
- 1/08/2014 - Wednesday		
5:20 pm	Left FedEx origin facility	PASCO, WA
3:59 pm	Picked up	PASCO, WA
12:07 pm	Shipment information sent to FedEx	

Local Scan Time

Shipment Facts

Tracking number	797582780470	Service	FedEx Priority Overnight
Weight	53 lbs	Delivered To	Shipping/Receiving
Total pieces	1	Total shipment weight	53 lbs / 24 kgs
Shipper reference	GWS-098	Packaging	Your Packaging
Special handling section	Deliver Weekday		

CH2MHill Plateau Remediation Company		C.O.C. # I14-007-033	
81420		Page 1 of 1	
CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			
Collector Kevin Patterson	Contact/Requester Karen Waters-Husted	Telephone No.	509-376-4650
SAF No. 114-007	Sampling Origin Hanford Site	Purchase Order/Charge Code	30007IES20
Project Title 2ZP1, NOVEMBER 2013	Logbook No. HNF-N-506 58/56457	Ice Chest No.	6WS-139-09
Shipped To (Lab) TestAmerica St. Louis	Method of Shipment Commercial Carrier	Bill of Lading/Air Bill No.	7976-5465-6019
Protocol CERCLA	Priority: 30 Days	Offsite Property No.	
POSSIBLE SAMPLE HAZARDS/REMARKS ** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)		SPECIAL INSTRUCTIONS 200 Area Generator Knowledge Information Form applies. The CACN for analytical work at WSCF is 401647. FY13 and FY14 samples cannot be in the same SDG.	
Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>			
Sample No.	Filter	* Date	Time
B2RW36	N	W JAN 16 2014	1122
B2RW36	N	W JAN 16 2014	1122
No/Type Container		Sample Analysis	
3x500-mL G/P		9034_SULFIDE: COMMON	
1x20-mL P		Activity Scan	
Holding Time		Preservative	
7 Days		ZnAc+NaOH to pH > 9/Cool-4C	
6 Months		None	

Relinquished By Kevin Patterson	Print	Sign	Date/Time JAN 16 2014 1200	Received By RA Shepero	Print	Sign	Date/Time JAN 16 2014 1200	Matrix *
Relinquished By RA Shepero	Print	Sign	Date/Time 1/14/14 1400	Received By FEDEx	Print	Sign	Date/Time 1/16/14	S = Soil SE = Sediment SO = Solid SL = Sludge W = Water O = Oil A = Air
Relinquished By FEDEx	Print	Sign	Date/Time 1/17/14 0930	Received By Brian Danahy	Print	Sign	Date/Time 1/17/14 0930	DS = Drum Solids DL = Drum Liquids T = Tissue WI = Wipe L = Liquid V = Vegetation X = Other
Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time	
Disposal Method (e.g., Return to customer, per lab procedure, used in process)				Disposed By				Date/Time
FINAL SAMPLE DISPOSITION								

IMPORTANT!A winter storm is causing delays and disruptions in the eastern U.S. [Learn More](#)**797654656019**Ship (P/U) date :
Thur 1/16/2014 3:50 pm
RICHLAND, WA US**Delivered**
Signed for by: B.DANIELSActual delivery :
Fri 1/17/2014 9:28 am
EARTH CITY, MO US**Travel History**

Date/Time	Activity	Location
- 1/17/2014 - Friday		
9:28 am	Delivered	EARTH CITY, MO
6:55 am	On FedEx vehicle for delivery	EARTH CITY, MO
6:52 am	At local FedEx facility	EARTH CITY, MO
5:20 am	At destination sort facility	BERKELEY, MO
4:34 am	Departed FedEx location	MEMPHIS, TN
- 1/16/2014 - Thursday		
6:04 pm	Left FedEx origin facility	PASCO, WA
3:50 pm	Picked up	PASCO, WA
3:14 pm	Shipment information sent to FedEx	

Local Scan Time

Shipment Facts

Tracking number	797654656019	Service	FedEx Priority Overnight
Weight	11 lbs	Delivered To	Shipping/Receiving
Total pieces	1	Total shipment weight	11 lbs / 5 kgs
Shipper reference	GWS-139-09	Packaging	Your Packaging
Special handling section	Deliver Weekday		

GWS-237
#45

FEBRUARY 12, 2014

CH2M Hill Plateau Remediation Company		GWS-237		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		C.O.C. # S14-001-149	
Collector John Fulton		Contact/Requester Karen Waters-Husted	Telephone No. 509-376-4650		Page 1 of 1		
SAF No. S14-001		Sampling Origin Hanford Site	Purchase Order/Charge Code 300071ES20				
Project Title SURV, JANUARY 2014		Logbook No. HNF-N-506 01132	Ice Chest No. GWS-237				
Shipped To (Lab) TestAmerica St. Louis		Method of Shipment Commercial Carrier	Bill of Lading/Air Bill No. 797687424788				
Protocol SURV		Priority: 30 Days	Offsite Property No.				
POSSIBLE SAMPLE HAZARDS/REMARKS		SPECIAL INSTRUCTIONS		Hold Time		Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
** ** Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR/IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1.		Site Wide Generator Knowledge Information Form applies. The CACN for analytical work at WSCF is 401647.					
Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	
B2V0V3	N	W	1-21-14	0820	2x1-L aG	8081_PEST_GC: COMMON; 8081_PEST_GC: CH 01	
B2V0V3	N	W	1-21-14	1400	1x20-mL P	Activity Scan	
						Holding Time	
						7/40 Days	
						6 Months	
						Preservative	
						Cool-4C	
						None	

Relinquished By John Fulton	Print	Sign	Date/Time JAN 21 2014 1200	Received By ASAPAO	Print	Sign	Date/Time JAN 21 2014 1200	Matrix *
Relinquished By ASAPAO	Print	Sign	Date/Time JAN 21 2014 1200	Received By FEDX	Print	Sign	Date/Time 1/21/14	S = Soil DS = Drum Solids SE = Sediment DL = Drum Liquids SO = Solid T = Tissue SL = Sludge WI = Wipe W = Water L = Liquid O = Oil V = Vegetation A = Air X = Other
Relinquished By ASAPAO	Print	Sign	Date/Time JAN 21 2014 1200	Received By Brian Daniels	Print	Sign	Date/Time 1/22/14 0925	
Relinquished By ASAPAO	Print	Sign	Date/Time JAN 21 2014 1200	Received By	Print	Sign	Date/Time	
2/12/2014				Disposal Method (e.g., Return to customer, per lab procedure, used in process)				
FINAL SAMPLE DISPOSITION				Disposed By				
PRINTED O 12/3/2013				A-6004-842 (REV 2)				

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13

CH2M Hill Plateau Remediation Company		C.O.C. # S14-001-150	
81420		Page 1 of 1	
CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			
Collector	John Fulton	Contact/Requester	Karen Waters-Husted
SAF No.	S14-001	Sampling Origin	Hanford Site
Project Title	SURV, JANUARY 2014	Logbook No.	HNF-N-506 61132
Shipped To (Lab)	TestAmerica St. Louis	Method of Shipment	Commercial Carrier
Protocol	SURV	Priority:	30 Days
POSSIBLE SAMPLE HAZARDS/REMARKS		SPECIAL INSTRUCTIONS	
*** Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR/IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1.		Hold Time	
		Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Sample No.	Filter	* Time	No/Type Container
B2TYW4	N	W 1-21-14 1040	2x1-L aG
B2TYW4	N	W	1x20-mL P
Sample Analysis		Holding Time	Preservative
8081_PEST_GC: COMMON; 8081_PEST_GC: CH 01		7/40 Days	Cool~4C
Activity Scan		6 Months	None

Site Wide Generator Knowledge Information Form applies.
The CACN for analytical work at WSCF is 401647.

Relinquished By	John Fulton	Print	Sign	Received By	Print	Sign	Date/Time	Matrix *
Relinquished By	John Fulton	Print	Sign	Received By	Print	Sign	Date/Time	Matrix *
Relinquished By	John Fulton	Print	Sign	Received By	Print	Sign	Date/Time	Matrix *
Relinquished By	John Fulton	Print	Sign	Received By	Print	Sign	Date/Time	Matrix *

Disposal Method (e.g., Return to customer, per lab procedure, used in process)

Disposed By

DATE/12/26/2013

PRINTED O 11/26/2013

A-6004-842 (REV 2)

IMPORTANT!

A winter storm is causing delays and disruptions in the eastern U.S. Learn More



797687124798

Ship (P/U) date :
Tues 1/21/2014 3:50 pm
RICHLAND, WA US**Delivered**
Signed for by B.DANIELSActual delivery :
Wed 1/22/2014 9:21 am
EARTH CITY, MO US

Travel History

Date/Time	Activity	Location
- 1/22/2014 - Wednesday		
9:21 am	Delivered	EARTH CITY, MO
7:37 am	On FedEx vehicle for delivery	EARTH CITY, MO
7:32 am	At local FedEx facility	EARTH CITY, MO
5:27 am	At destination sort facility	BERKELEY, MO
4:35 am	Departed FedEx location	MEMPHIS, TN
12:45 am	Arrived at FedEx location	MEMPHIS, TN
- 1/21/2014 - Tuesday		
5:17 pm	Left FedEx origin facility	PASCO, WA
3:50 pm	Picked up	PASCO, WA
2:45 pm	Shipment information sent to FedEx	

Local Scan Time

Shipment Facts

Tracking number	797687124798	Service	FedEx Priority Overnight
Weight	45 lbs	Delivered To	Shipping/Receiving
Total pieces	1	Total shipment weight	45 lbs / 20.4 kgs
Shipper reference	GWS-237	Packaging	Your Packaging
Special handling section	Deliver Weekday		

FEBRUARY 12, 2014

Login Sample Receipt Checklist

Client: CH2M Hill Plateau Remediation Company

Job Number: 160-5113-1

SDG Number: SL1420

Login Number: 5113

List Number: 1

Creator: Daniels, Brian J

List Source: TestAmerica St. Louis

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	False	Insufficient volume received for MS/MSD on Pests.
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

FEBRUARY 12, 2014

Login Sample Receipt Checklist

Client: CH2M Hill Plateau Remediation Company

Job Number: 160-5113-1

SDG Number: SL1420

Login Number: 5202

List Number: 1

Creator: Daniels, Brian J

List Source: TestAmerica St. Louis

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

FEBRUARY 12, 2014

Login Sample Receipt Checklist

Client: CH2M Hill Plateau Remediation Company

Job Number: 160-5113-1

SDG Number: SL1420

Login Number: 5242

List Source: TestAmerica St. Louis

List Number: 1

Creator: Daniels, Brian J

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	False	Insufficient volume received for MS/MSD.
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Client: CH2M Hill Plateau Remediation Company
Project/Site: S,W,I,A ,X SAFS- GROUNDWATER

TestAmerica Job ID: 160-5113-1
SDG: SL1420

Qualifiers

GC Semi VOA

Qualifier	Qualifier Description
U	Analyzed for but not detected.
N	MS, MSD: Spike recovery exceeds upper or lower control limits.
O	LCS, LCSD: Recovery exceeds upper or lower control limits.

General Chemistry

Qualifier	Qualifier Description
B	Estimated result. Result is less than the RL, but greater than MDL
C	The analyte was detected in both the sample and the associated QC blank, and the sample concentration was $\leq 5X$ the blank concentration.
U	Analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Client: CH2M Hill Plateau Remediation Company
Project/Site: S,W,I,A ,X SAFS- GROUNDWATER

TestAmerica Job ID: 160-5113-1
SDG: SL1420

Method	Method Description	Protocol	Laboratory
8081B	Organochlorine Pesticides (GC)	SW846	TAL SL
9034	Sulfide, Acid Soluble and Insoluble (Titrimetric)	SW846	TAL SL

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566



FEBRUARY 12, 2014

Sample Summary

Client: CH2M Hill Plateau Remediation Company
 Project/Site: S,W,I,A ,X SAFS- GROUNDWATER

TestAmerica Job ID: 160-5113-1
 SDG: SL1420

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
160-5113-1	B2TK19	Water	01/07/14 09:36	01/09/14 11:20
160-5113-2	B2TJ02	Water	01/07/14 07:15	01/09/14 11:20
160-5113-3	B2TKN5	Water	01/07/14 10:45	01/09/14 11:20
160-5113-4	B2TKP1	Water	01/07/14 11:56	01/09/14 11:20
160-5113-5	B2TKW4	Water	01/07/14 10:45	01/09/14 11:20
160-5202-1	B2RW36	Water	01/16/14 11:22	01/17/14 09:30
160-5242-1	B2V0V3	Water	01/21/14 08:20	01/22/14 09:25
160-5242-2	B2TYW4	Water	01/21/14 10:40	01/22/14 09:25

FEBRUARY 12, 2014

Detection Summary

Client: CH2M Hill Plateau Remediation Company
Project/Site: S,W,I,A ,X SAFS- GROUNDWATER

TestAmerica Job ID: 160-5113-1
SDG: SL1420

Client Sample ID: B2TK19

Lab Sample ID: 160-5113-1

No Detections.

Client Sample ID: B2TJ02

Lab Sample ID: 160-5113-2

No Detections.

Client Sample ID: B2TKN5

Lab Sample ID: 160-5113-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfide	0.10	B C	1.0	0.083	mg/L	1		9034	Total/NA

Client Sample ID: B2TKP1

Lab Sample ID: 160-5113-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfide	0.10	B C	1.0	0.083	mg/L	1		9034	Total/NA

Client Sample ID: B2TKW4

Lab Sample ID: 160-5113-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfide	0.20	B C	1.0	0.083	mg/L	1		9034	Total/NA

Client Sample ID: B2RW36

Lab Sample ID: 160-5202-1

No Detections.

Client Sample ID: B2V0V3

Lab Sample ID: 160-5242-1

No Detections.

Client Sample ID: B2TYW4

Lab Sample ID: 160-5242-2

No Detections.

This Detection Summary does not include radiochemical test results.

TestAmerica St. Louis

Client: CH2M Hill Plateau Remediation Company
Project/Site: S,W,I,A ,X SAFS- GROUNDWATER

TestAmerica Job ID: 160-5113-1
SDG: SL1420

Method: 8081B - Organochlorine Pesticides (GC)

Client Sample ID: B2TK19
Date Collected: 01/07/14 09:36
Date Received: 01/09/14 11:20

Lab Sample ID: 160-5113-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
alpha-Chlordane	0.014	U	0.048	0.014	ug/L		01/10/14 10:09	01/16/14 14:55	1
trans-Chlordane	0.0095	U	0.048	0.0095	ug/L		01/10/14 10:09	01/16/14 14:55	1
Endrin ketone	0.0095	U	0.048	0.0095	ug/L		01/10/14 10:09	01/16/14 14:55	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl (Surr)	88		44 - 112				01/10/14 10:09	01/16/14 14:55	1
Tetrachloro-m-xylene	104		49 - 104				01/10/14 10:09	01/16/14 14:55	1

Client Sample ID: B2TJ02
Date Collected: 01/07/14 07:15
Date Received: 01/09/14 11:20

Lab Sample ID: 160-5113-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
alpha-Chlordane	0.014	U	0.048	0.014	ug/L		01/10/14 10:11	01/16/14 15:55	1
trans-Chlordane	0.0095	U	0.048	0.0095	ug/L		01/10/14 10:11	01/16/14 15:55	1
Endrin ketone	0.0095	U	0.048	0.0095	ug/L		01/10/14 10:11	01/16/14 15:55	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl (Surr)	83		44 - 112				01/10/14 10:11	01/16/14 15:55	1
Tetrachloro-m-xylene	103		49 - 104				01/10/14 10:11	01/16/14 15:55	1

Client Sample ID: B2V0V3
Date Collected: 01/21/14 08:20
Date Received: 01/22/14 09:25

Lab Sample ID: 160-5242-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	0.0096	U	0.048	0.0096	ug/L		01/28/14 09:52	02/03/14 23:20	1
alpha-BHC	0.0096	U N	0.048	0.0096	ug/L		01/28/14 09:52	02/03/14 23:20	1
beta-BHC	0.012	U	0.048	0.012	ug/L		01/28/14 09:52	02/03/14 23:20	1
delta-BHC	0.0096	U O N	0.048	0.0096	ug/L		01/28/14 09:52	02/03/14 23:20	1
gamma-BHC (Lindane)	0.0096	U	0.048	0.0096	ug/L		01/28/14 09:52	02/03/14 23:20	1
alpha-Chlordane	0.014	U N	0.048	0.014	ug/L		01/28/14 09:52	02/03/14 23:20	1
trans-Chlordane	0.0096	U	0.048	0.0096	ug/L		01/28/14 09:52	02/03/14 23:20	1
4,4'-DDD	0.0096	U O N	0.048	0.0096	ug/L		01/28/14 09:52	02/03/14 23:20	1
4,4'-DDE	0.013	U O N	0.048	0.013	ug/L		01/28/14 09:52	02/03/14 23:20	1
4,4'-DDT	0.022	U N	0.048	0.022	ug/L		01/28/14 09:52	02/03/14 23:20	1
Endrin ketone	0.0096	U	0.048	0.0096	ug/L		01/28/14 09:52	02/03/14 23:20	1
Dieldrin	0.0096	U	0.048	0.0096	ug/L		01/28/14 09:52	02/03/14 23:20	1
Endosulfan I	0.018	U	0.048	0.018	ug/L		01/28/14 09:52	02/03/14 23:20	1
Endosulfan II	0.0096	U	0.048	0.0096	ug/L		01/28/14 09:52	02/03/14 23:20	1
Endosulfan sulfate	0.0096	U	0.048	0.0096	ug/L		01/28/14 09:52	02/03/14 23:20	1
Endrin	0.017	U N	0.048	0.017	ug/L		01/28/14 09:52	02/03/14 23:20	1
Endrin aldehyde	0.0096	U	0.048	0.0096	ug/L		01/28/14 09:52	02/03/14 23:20	1
Heptachlor	0.0096	U	0.048	0.0096	ug/L		01/28/14 09:52	02/03/14 23:20	1
Heptachlor epoxide	0.016	U	0.048	0.016	ug/L		01/28/14 09:52	02/03/14 23:20	1
Methoxychlor	0.012	U O	0.48	0.012	ug/L		01/28/14 09:52	02/03/14 23:20	1
Toxaphene	0.26	U	1.9	0.26	ug/L		01/28/14 09:52	02/03/14 23:20	1
Technical Chlordane	0.096	U	0.48	0.096	ug/L		01/28/14 09:52	02/03/14 23:20	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl (Surr)	95		44 - 112				01/28/14 09:52	02/03/14 23:20	1
Tetrachloro-m-xylene	86		49 - 104				01/28/14 09:52	02/03/14 23:20	1

TestAmerica St. Louis

Client: CH2M Hill Plateau Remediation Company
Project/Site: S,W,I,A ,X SAFS- GROUNDWATER

TestAmerica Job ID: 160-5113-1
SDG: SL1420

Method: 8081B - Organochlorine Pesticides (GC)

Client Sample ID: B2TYW4
Date Collected: 01/21/14 10:40
Date Received: 01/22/14 09:25

Lab Sample ID: 160-5242-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	0.0097	U	0.049	0.0097	ug/L	—	01/28/14 09:52	02/04/14 00:19	1
alpha-BHC	0.0097	U N	0.049	0.0097	ug/L	—	01/28/14 09:52	02/04/14 00:19	1
beta-BHC	0.013	U	0.049	0.013	ug/L	—	01/28/14 09:52	02/04/14 00:19	1
delta-BHC	0.0097	U O N	0.049	0.0097	ug/L	—	01/28/14 09:52	02/04/14 00:19	1
gamma-BHC (Lindane)	0.0097	U	0.049	0.0097	ug/L	—	01/28/14 09:52	02/04/14 00:19	1
alpha-Chlordane	0.015	U N	0.049	0.015	ug/L	—	01/28/14 09:52	02/04/14 00:19	1
trans-Chlordane	0.0097	U	0.049	0.0097	ug/L	—	01/28/14 09:52	02/04/14 00:19	1
4,4'-DDD	0.0097	U O N	0.049	0.0097	ug/L	—	01/28/14 09:52	02/04/14 00:19	1
4,4'-DDE	0.014	U O N	0.049	0.014	ug/L	—	01/28/14 09:52	02/04/14 00:19	1
4,4'-DDT	0.022	U N	0.049	0.022	ug/L	—	01/28/14 09:52	02/04/14 00:19	1
Endrin ketone	0.0097	U	0.049	0.0097	ug/L	—	01/28/14 09:52	02/04/14 00:19	1
Dieldrin	0.0097	U	0.049	0.0097	ug/L	—	01/28/14 09:52	02/04/14 00:19	1
Endosulfan I	0.018	U	0.049	0.018	ug/L	—	01/28/14 09:52	02/04/14 00:19	1
Endosulfan II	0.0097	U	0.049	0.0097	ug/L	—	01/28/14 09:52	02/04/14 00:19	1
Endosulfan sulfate	0.0097	U	0.049	0.0097	ug/L	—	01/28/14 09:52	02/04/14 00:19	1
Endrin	0.017	U N	0.049	0.017	ug/L	—	01/28/14 09:52	02/04/14 00:19	1
Endrin aldehyde	0.0097	U	0.049	0.0097	ug/L	—	01/28/14 09:52	02/04/14 00:19	1
Heptachlor	0.0097	U	0.049	0.0097	ug/L	—	01/28/14 09:52	02/04/14 00:19	1
Heptachlor epoxide	0.017	U	0.049	0.017	ug/L	—	01/28/14 09:52	02/04/14 00:19	1
Methoxychlor	0.013	U O	0.49	0.013	ug/L	—	01/28/14 09:52	02/04/14 00:19	1
Toxaphene	0.26	U	1.9	0.26	ug/L	—	01/28/14 09:52	02/04/14 00:19	1
Technical Chlordane	0.097	U	0.49	0.097	ug/L	—	01/28/14 09:52	02/04/14 00:19	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl (Surr)	108		44 - 112	01/28/14 09:52	02/04/14 00:19	1
Tetrachloro-m-xylene	91		49 - 104	01/28/14 09:52	02/04/14 00:19	1

General Chemistry

Client Sample ID: B2TKN5
Date Collected: 01/07/14 10:45
Date Received: 01/09/14 11:20

Lab Sample ID: 160-5113-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	0.10	B C	1.0	0.083	mg/L	—		01/13/14 12:46	1

Client Sample ID: B2TKP1
Date Collected: 01/07/14 11:56
Date Received: 01/09/14 11:20

Lab Sample ID: 160-5113-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	0.10	B C	1.0	0.083	mg/L	—		01/13/14 12:46	1

Client Sample ID: B2TKW4
Date Collected: 01/07/14 10:45
Date Received: 01/09/14 11:20

Lab Sample ID: 160-5113-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	0.20	B C	1.0	0.083	mg/L	—		01/13/14 12:46	1

Client: CH2M Hill Plateau Remediation Company
 Project/Site: S,W,I,A ,X SAFS- GROUNDWATER

TestAmerica Job ID: 160-5113-1
 SDG: SL1420

General Chemistry

Client Sample ID: B2RW36
Date Collected: 01/16/14 11:22
Date Received: 01/17/14 09:30

Lab Sample ID: 160-5202-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	0.083	U	1.0	0.083	mg/L	—		01/22/14 13:19	1

Client: CH2M Hill Plateau Remediation Company
Project/Site: S,W,I,A ,X SAFS- GROUNDWATER

TestAmerica Job ID: 160-5113-1
SDG: SL1420

Method: 8081B - Organochlorine Pesticides (GC)

Lab Sample ID: MB 160-101603/1-A

Matrix: Water

Analysis Batch: 102842

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 101603

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	0.010	U	0.050	0.010	ug/L		01/28/14 09:52	02/03/14 22:40	1
alpha-BHC	0.010	U	0.050	0.010	ug/L		01/28/14 09:52	02/03/14 22:40	1
beta-BHC	0.013	U	0.050	0.013	ug/L		01/28/14 09:52	02/03/14 22:40	1
delta-BHC	0.010	U	0.050	0.010	ug/L		01/28/14 09:52	02/03/14 22:40	1
gamma-BHC (Lindane)	0.010	U	0.050	0.010	ug/L		01/28/14 09:52	02/03/14 22:40	1
alpha-Chlordane	0.015	U	0.050	0.015	ug/L		01/28/14 09:52	02/03/14 22:40	1
trans-Chlordane	0.010	U	0.050	0.010	ug/L		01/28/14 09:52	02/03/14 22:40	1
4,4'-DDD	0.010	U	0.050	0.010	ug/L		01/28/14 09:52	02/03/14 22:40	1
4,4'-DDE	0.014	U	0.050	0.014	ug/L		01/28/14 09:52	02/03/14 22:40	1
4,4'-DDT	0.023	U	0.050	0.023	ug/L		01/28/14 09:52	02/03/14 22:40	1
Endrin ketone	0.010	U	0.050	0.010	ug/L		01/28/14 09:52	02/03/14 22:40	1
Dieldrin	0.010	U	0.050	0.010	ug/L		01/28/14 09:52	02/03/14 22:40	1
Endosulfan I	0.019	U	0.050	0.019	ug/L		01/28/14 09:52	02/03/14 22:40	1
Endosulfan II	0.010	U	0.050	0.010	ug/L		01/28/14 09:52	02/03/14 22:40	1
Endosulfan sulfate	0.010	U	0.050	0.010	ug/L		01/28/14 09:52	02/03/14 22:40	1
Endrin	0.018	U	0.050	0.018	ug/L		01/28/14 09:52	02/03/14 22:40	1
Endrin aldehyde	0.010	U	0.050	0.010	ug/L		01/28/14 09:52	02/03/14 22:40	1
Heptachlor	0.010	U	0.050	0.010	ug/L		01/28/14 09:52	02/03/14 22:40	1
Heptachlor epoxide	0.017	U	0.050	0.017	ug/L		01/28/14 09:52	02/03/14 22:40	1
Methoxychlor	0.013	U	0.50	0.013	ug/L		01/28/14 09:52	02/03/14 22:40	1
Toxaphene	0.27	U	2.0	0.27	ug/L		01/28/14 09:52	02/03/14 22:40	1
Technical Chlordane	0.10	U	0.50	0.10	ug/L		01/28/14 09:52	02/03/14 22:40	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl (Surr)	104		44 - 112	01/28/14 09:52	02/03/14 22:40	1
Tetrachloro-m-xylene	66		49 - 104	01/28/14 09:52	02/03/14 22:40	1

Lab Sample ID: LCS 160-101603/2-A

Matrix: Water

Analysis Batch: 102842

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 101603

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aldrin	0.500	0.416		ug/L		83	42 - 103
alpha-BHC	0.500	0.521		ug/L		104	65 - 109
beta-BHC	0.500	0.489		ug/L		98	62 - 105
delta-BHC	0.500	0.621	O	ug/L		124	66 - 111
gamma-BHC (Lindane)	0.501	0.501		ug/L		100	63 - 110
alpha-Chlordane	0.500	0.499		ug/L		100	58 - 106
trans-Chlordane	0.500	0.464		ug/L		93	55 - 107
4,4'-DDD	0.500	0.634	O	ug/L		127	63 - 115
4,4'-DDE	0.501	0.541	O	ug/L		108	58 - 107
4,4'-DDT	0.500	0.563		ug/L		113	63 - 115
Endrin ketone	0.501	0.498		ug/L		99	60 - 112
Dieldrin	0.501	0.486		ug/L		97	63 - 106
Endosulfan I	0.500	0.364		ug/L		73	40 - 106
Endosulfan II	0.500	0.369		ug/L		74	48 - 104
Endosulfan sulfate	0.500	0.507		ug/L		101	61 - 111
Endrin	0.501	0.522		ug/L		104	64 - 111

TestAmerica St. Louis

Client: CH2M Hill Plateau Remediation Company
Project/Site: S,W,I,A ,X SAFS- GROUNDWATER

TestAmerica Job ID: 160-5113-1
SDG: SL1420

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Lab Sample ID: LCS 160-101603/2-A

Matrix: Water

Analysis Batch: 102842

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 101603

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Endrin aldehyde	0.500	0.489		ug/L		98	40 - 139
Heptachlor	0.500	0.353		ug/L		71	42 - 119
Heptachlor epoxide	0.500	0.490		ug/L		98	63 - 106
Methoxychlor	0.500	0.613	O	ug/L		123	62 - 119

Surrogate	LCS %Recovery	LCS Qualifier	Limits
DCB Decachlorobiphenyl (Surr)	102		44 - 112
Tetrachloro-m-xylene	71		49 - 104

Lab Sample ID: 160-5242-1 MS

Matrix: Water

Analysis Batch: 102842

Client Sample ID: B2V0V3

Prep Type: Total/NA

Prep Batch: 101603

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Aldrin	0.0096	U	0.930	0.940		ug/L		101	42 - 103
alpha-BHC	0.0096	U N	0.930	1.08	N	ug/L		116	65 - 109
beta-BHC	0.012	U	0.930	0.962		ug/L		103	62 - 105
delta-BHC	0.0096	U O N	0.930	1.21	N	ug/L		130	66 - 111
gamma-BHC (Lindane)	0.0096	U	0.931	0.991		ug/L		106	63 - 110
alpha-Chlordane	0.014	U N	0.930	1.03	N	ug/L		110	58 - 106
trans-Chlordane	0.0096	U	0.930	0.958		ug/L		103	55 - 107
4,4'-DDD	0.0096	U O N	0.930	1.25	N	ug/L		135	63 - 115
4,4'-DDE	0.013	U O N	0.931	1.11	N	ug/L		120	58 - 107
4,4'-DDT	0.022	U N	0.930	1.13	N	ug/L		122	65 - 119
Endrin ketone	0.0096	U	0.931	0.994		ug/L		107	60 - 112
Dieldrin	0.0096	U	0.931	0.973		ug/L		104	63 - 106
Endosulfan I	0.018	U	0.930	0.710		ug/L		76	33 - 111
Endosulfan II	0.0096	U	0.930	0.734		ug/L		79	48 - 104
Endosulfan sulfate	0.0096	U	0.930	1.01		ug/L		109	61 - 111
Endrin	0.017	U N	0.931	1.04	N	ug/L		112	64 - 111
Endrin aldehyde	0.0096	U	0.931	0.961		ug/L		103	50 - 150
Heptachlor	0.0096	U	0.930	0.744		ug/L		80	43 - 132
Heptachlor epoxide	0.016	U	0.930	0.980		ug/L		105	63 - 106
Methoxychlor	0.012	U O	0.930	1.21		ug/L		130	59 - 130

Surrogate	MS %Recovery	MS Qualifier	Limits
DCB Decachlorobiphenyl (Surr)	115		44 - 112
Tetrachloro-m-xylene	85		49 - 104

Lab Sample ID: 160-5242-1 MSD

Matrix: Water

Analysis Batch: 102842

Client Sample ID: B2V0V3

Prep Type: Total/NA

Prep Batch: 101603

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Aldrin	0.0096	U	0.980	0.968		ug/L		99	42 - 103	3	20
alpha-BHC	0.0096	U N	0.980	1.08	N	ug/L		111	65 - 109	0	20
beta-BHC	0.012	U	0.980	0.967		ug/L		99	62 - 105	1	20
delta-BHC	0.0096	U O N	0.980	1.17	N	ug/L		119	66 - 111	4	20

TestAmerica St. Louis

Client: CH2M Hill Plateau Remediation Company
Project/Site: S,W,I,A ,X SAFS- GROUNDWATER

TestAmerica Job ID: 160-5113-1
SDG: SL1420

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Lab Sample ID: 160-5242-1 MSD

Matrix: Water

Analysis Batch: 102842

Client Sample ID: B2V0V3

Prep Type: Total/NA

Prep Batch: 101603

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
gamma-BHC (Lindane)	0.0096	U	0.981	0.998		ug/L		102	63 - 110	1	20
alpha-Chlordane	0.014	U N	0.980	1.03		ug/L		105	58 - 106	1	20
trans-Chlordane	0.0096	U	0.980	0.963		ug/L		98	55 - 107	1	20
4,4'-DDD	0.0096	U O N	0.980	1.22	N	ug/L		125	63 - 115	3	20
4,4'-DDE	0.013	U O N	0.981	1.13	N	ug/L		115	58 - 107	1	20
4,4'-DDT	0.022	U N	0.980	1.11		ug/L		113	65 - 119	2	20
Endrin ketone	0.0096	U	0.981	0.984		ug/L		100	60 - 112	1	20
Dieldrin	0.0096	U	0.981	0.978		ug/L		100	63 - 106	1	20
Endosulfan I	0.018	U	0.980	0.718		ug/L		73	33 - 111	1	20
Endosulfan II	0.0096	U	0.980	0.739		ug/L		75	48 - 104	1	20
Endosulfan sulfate	0.0096	U	0.980	1.01		ug/L		103	61 - 111	1	20
Endrin	0.017	U N	0.981	1.04		ug/L		106	64 - 111	0	20
Endrin aldehyde	0.0096	U	0.980	0.959		ug/L		98	50 - 150	0	20
Heptachlor	0.0096	U	0.980	0.798		ug/L		81	43 - 132	7	20
Heptachlor epoxide	0.016	U	0.980	0.982		ug/L		100	63 - 106	0	20
Methoxychlor	0.012	U O	0.980	1.18		ug/L		120	59 - 130	3	20

Surrogate	MSD %Recovery	MSD Qualifier	Limits
DCB Decachlorobiphenyl (Surr)	108		44 - 112
Tetrachloro-m-xylene	84		49 - 104

Lab Sample ID: MB 160-97301/1-A

Matrix: Water

Analysis Batch: 99030

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 97301

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
alpha-Chlordane	0.015	U	0.050	0.015	ug/L		01/10/14 10:09	01/16/14 14:14	1
trans-Chlordane	0.010	U	0.050	0.010	ug/L		01/10/14 10:09	01/16/14 14:14	1
Endrin ketone	0.010	U	0.050	0.010	ug/L		01/10/14 10:09	01/16/14 14:14	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl (Surr)	78		44 - 112	01/10/14 10:09	01/16/14 14:14	1
Tetrachloro-m-xylene	99		49 - 104	01/10/14 10:09	01/16/14 14:14	1

Lab Sample ID: LCS 160-97301/2-A

Matrix: Water

Analysis Batch: 99030

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 97301

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
alpha-Chlordane	0.500	0.531		ug/L		106	58 - 106
trans-Chlordane	0.500	0.504		ug/L		101	55 - 107
Endrin ketone	0.501	0.521		ug/L		104	60 - 112

Surrogate	LCS %Recovery	LCS Qualifier	Limits
DCB Decachlorobiphenyl (Surr)	77		44 - 112
Tetrachloro-m-xylene	107		49 - 104

TestAmerica St. Louis

Client: CH2M Hill Plateau Remediation Company
Project/Site: S,W,I,A ,X SAFS- GROUNDWATER

TestAmerica Job ID: 160-5113-1
SDG: SL1420

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Lab Sample ID: 160-5113-1 MS

Matrix: Water

Analysis Batch: 99030

Client Sample ID: B2TK19

Prep Type: Total/NA

Prep Batch: 97301

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
alpha-Chlordane	0.014	U	0.975	1.03		ug/L		106	58 - 106
trans-Chlordane	0.0095	U	0.975	0.983		ug/L		101	55 - 107
Endrin ketone	0.0095	U	0.977	1.07		ug/L		110	60 - 112
MS MS									
Surrogate	%Recovery	Qualifier	Limits						
DCB Decachlorobiphenyl (Surr)	112		44 - 112						
Tetrachloro-m-xylene	99		49 - 104						

Lab Sample ID: 160-5113-1 MSD

Matrix: Water

Analysis Batch: 99030

Client Sample ID: B2TK19

Prep Type: Total/NA

Prep Batch: 97301

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
alpha-Chlordane	0.014	U	0.922	0.889		ug/L		96	58 - 106	15	20
trans-Chlordane	0.0095	U	0.922	0.845		ug/L		92	55 - 107	15	20
Endrin ketone	0.0095	U	0.923	0.882		ug/L		96	60 - 112	20	20
MSD MSD											
Surrogate	%Recovery	Qualifier	Limits								
DCB Decachlorobiphenyl (Surr)	97		44 - 112								
Tetrachloro-m-xylene	98		49 - 104								

Method: 9034 - Sulfide, Acid Soluble and Insoluble (Titrimetric)

Lab Sample ID: MB 160-100673/1

Matrix: Water

Analysis Batch: 100673

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	0.083	U	1.0	0.083	mg/L			01/22/14 13:19	1

Lab Sample ID: LCS 160-100673/2

Matrix: Water

Analysis Batch: 100673

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfide	10.0	9.10		mg/L		91	70 - 130

Lab Sample ID: 160-5202-1 MS

Matrix: Water

Analysis Batch: 100673

Client Sample ID: B2RW36

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfide	0.083	U	10.0	9.30		mg/L		93	70 - 130

Client: CH2M Hill Plateau Remediation Company
Project/Site: S,W,I,A ,X SAFS- GROUNDWATER

TestAmerica Job ID: 160-5113-1
SDG: SL1420

Method: 9034 - Sulfide, Acid Soluble and Insoluble (Titrimetric) (Continued)

Lab Sample ID: 160-5202-1 DU
Matrix: Water
Analysis Batch: 100673

Client Sample ID: B2RW36
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Sulfide	0.083	U	0.083	U	mg/L		NC	20

Lab Sample ID: MB 160-97892/1
Matrix: Water
Analysis Batch: 97892

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	0.100	B	1.0	0.083	mg/L			01/13/14 12:46	1

Lab Sample ID: LCS 160-97892/2
Matrix: Water
Analysis Batch: 97892

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfide	10.0	9.70		mg/L		97	70 - 130

Lab Sample ID: 160-5113-4 MS
Matrix: Water
Analysis Batch: 97892

Client Sample ID: B2TKP1
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfide	0.10	B C	10.0	9.70		mg/L		96	70 - 130

Lab Sample ID: 160-5113-4 DU
Matrix: Water
Analysis Batch: 97892

Client Sample ID: B2TKP1
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Sulfide	0.10	B C	0.100	B	mg/L		0	20

Client: CH2M Hill Plateau Remediation Company
Project/Site: S,W,I,A ,X SAFS- GROUNDWATER

TestAmerica Job ID: 160-5113-1
SDG: SL1420

GC Semi VOA

Prep Batch: 97301

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-5113-1	B2TK19	Total/NA	Water	3510C	
160-5113-1 MS	B2TK19	Total/NA	Water	3510C	
160-5113-1 MSD	B2TK19	Total/NA	Water	3510C	
160-5113-2	B2TJ02	Total/NA	Water	3510C	
LCS 160-97301/2-A	Lab Control Sample	Total/NA	Water	3510C	
MB 160-97301/1-A	Method Blank	Total/NA	Water	3510C	

Analysis Batch: 99030

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-5113-1	B2TK19	Total/NA	Water	8081B	97301
160-5113-1 MS	B2TK19	Total/NA	Water	8081B	97301
160-5113-1 MSD	B2TK19	Total/NA	Water	8081B	97301
160-5113-2	B2TJ02	Total/NA	Water	8081B	97301
LCS 160-97301/2-A	Lab Control Sample	Total/NA	Water	8081B	97301
MB 160-97301/1-A	Method Blank	Total/NA	Water	8081B	97301

Prep Batch: 101603

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-5242-1	B2V0V3	Total/NA	Water	3510C	
160-5242-1 MS	B2V0V3	Total/NA	Water	3510C	
160-5242-1 MSD	B2V0V3	Total/NA	Water	3510C	
160-5242-2	B2TYW4	Total/NA	Water	3510C	
LCS 160-101603/2-A	Lab Control Sample	Total/NA	Water	3510C	
MB 160-101603/1-A	Method Blank	Total/NA	Water	3510C	

Analysis Batch: 102842

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-5242-1	B2V0V3	Total/NA	Water	8081B	101603
160-5242-1 MS	B2V0V3	Total/NA	Water	8081B	101603
160-5242-1 MSD	B2V0V3	Total/NA	Water	8081B	101603
160-5242-2	B2TYW4	Total/NA	Water	8081B	101603
LCS 160-101603/2-A	Lab Control Sample	Total/NA	Water	8081B	101603
MB 160-101603/1-A	Method Blank	Total/NA	Water	8081B	101603

General Chemistry

Analysis Batch: 97892

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-5113-3	B2TKN5	Total/NA	Water	9034	
160-5113-4	B2TKP1	Total/NA	Water	9034	
160-5113-4 DU	B2TKP1	Total/NA	Water	9034	
160-5113-4 MS	B2TKP1	Total/NA	Water	9034	
160-5113-5	B2TKW4	Total/NA	Water	9034	
LCS 160-97892/2	Lab Control Sample	Total/NA	Water	9034	
MB 160-97892/1	Method Blank	Total/NA	Water	9034	

Analysis Batch: 100673

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-5202-1	B2RW36	Total/NA	Water	9034	
160-5202-1 DU	B2RW36	Total/NA	Water	9034	

TestAmerica St. Louis

Client: CH2M Hill Plateau Remediation Company
 Project/Site: S,W,I,A ,X SAFS- GROUNDWATER

TestAmerica Job ID: 160-5113-1
 SDG: SL1420

General Chemistry (Continued)

Analysis Batch: 100673 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-5202-1 MS	B2RW36	Total/NA	Water	9034	
LCS 160-100673/2	Lab Control Sample	Total/NA	Water	9034	
MB 160-100673/1	Method Blank	Total/NA	Water	9034	

Client: CH2M Hill Plateau Remediation Company
Project/Site: S,W,I,A ,X SAFS- GROUNDWATER

TestAmerica Job ID: 160-5113-1
SDG: SL1420

Method: 8081B - Organochlorine Pesticides (GC)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	DCB2 (44-112)	TCX2 (49-104)
160-5113-1	B2TK19	88	104
160-5113-1 MS	B2TK19	112	99
160-5113-1 MSD	B2TK19	97	98
160-5113-2	B2TJ02	83	103
160-5242-1	B2V0V3	95	86
160-5242-1 MS	B2V0V3	115	85
160-5242-1 MSD	B2V0V3	108	84
160-5242-2	B2TYW4	108	91
LCS 160-101603/2-A	Lab Control Sample	102	71
LCS 160-97301/2-A	Lab Control Sample	77	107
MB 160-101603/1-A	Method Blank	104	66
MB 160-97301/1-A	Method Blank	78	99

Surrogate Legend

DCB = DCB Decachlorobiphenyl (Surr)

TCX = Tetrachloro-m-xylene